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(54) **MOUNTING SYSTEM FOR OPTICAL
FREQUENCY REFERENCE CAVITIES**

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See application file for complete search history.

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(57) **ABSTRACT**

A technique for reducing the vibration sensitivity of laser-
stabilizing optical reference cavities is based upon an
improved design and mounting method for the cavity,
wherein the cavity is mounted vertically. It is suspended at
one plane, around the spacer cylinder, equidistant from the
mirror ends of the cavity. The suspension element is a collar
of an extremely low thermal expansion coefficient material,
which surrounds the spacer cylinder and contacts it uni-
formly. Once the collar has been properly located, it is
cemented in place so that the spacer cylinder is uniformly
supported and does not have to be squeezed at all. The collar
also includes a number of cavities partially bored into its
lower flat surface, around the axial bore. These cavities are
support points, into which mounting base pins will be
inserted. Hence the collar is supported at a minimum of three
points.

27 Claims, 3 Drawing Sheets

